

PATENT

Serial No. 10/726,963

IN THE CLAIMS:

- 1 1. (Currently Amended) A prosthesis [adapted for inter-luminal
2 placement by endovascular deployment, the prosthesis] comprising a
3 plurality of self expanding stents linked together by links and defining an
4 elongate substantially cylindrical lumen wall engaging surface and at least
5 one of the stents having a bio-compatible graft material cover thereby
6 defining a covered stent portion and an uncovered stent portion [, whereby
7 the cover is adapted to close off a rupture in the wall of the lumen and the
8 stents are adapted to provide pressure on the wall of the lumen adjacent
9 to and extending away from the rupture].

- 1 2. (Currently Amended) A prosthesis as in Claim 1 wherein the cover
2 encompasses at least two of the plurality of stents and the cover is stitched
3 or otherwise fastened to the stents in the covered stent portion.

- 1 3. (Currently Amended) A prosthesis as in Claim 1 wherein the covered
2 stent portion of the prosthesis is at the proximal end of the plurality of
3 stents.

- 1 4. (Currently Amended) A prosthesis as in Claim 1 wherein the
2 uncovered stent portion [stents] extends away from the covered portion
3 and the stents of the uncovered stent portion are linked by flexible links.

- 1 5. (Currently Amended) A prosthesis as in Claim 1 wherein the
2 uncovered stent portion [stents] extends away from the covered stent
3 portion and the stents of the uncovered stent portion are linked by a thread
4 or fibre [such as a suture] threaded through [the] bends of the [zig-zag]
5 stents.

- 1 6. (Currently Amended) A prosthesis as in Claim 5 [1] wherein the
2 thread or fibre [such as a suture] is connected to each bend by a knot

PATENT

Serial No. 10/726,963

3 selected from [such as at least one of] a half hitch, a thumb knot, two half
4 hitches or a clove hitch.

1 7. (Currently Amended) A prosthesis as in Claim 1 wherein a proximal
2 end of the covered portion of the prosthesis includes barbs extending from
3 a stent of the plurality of stents [pluralities] through the cover to engage
4 with the wall of the lumen when deployed.

1 8. (Currently Amended) A prosthesis as in Claim 1 wherein there are at
2 least three covered stents of the plurality of stents in the covered stent
3 portion each of the stents being of the zig-zag type and constructed from
4 stainless steel or Nitinol and up to eight or ten uncovered stents of the
5 plurality of stents in the uncovered stent portion formed from stainless
6 steel or Nitinol.

1 9. (Original) A prosthesis as in Claim 1 wherein the uncovered portion
2 is in the form of a self expanding spiral stent of zig-zag configuration.

1 10. (Currently Amended) A prosthesis for treatment of an aortic
2 dissection comprising a substantially cylindrical body in an expanded state
3 comprising at a proximal end thereof [having] at least one self expanding
4 stent covered by a bio-compatible graft material and [a] an uncovered self
5 expanding stent assembly extending from a distal end thereof wherein the
6 uncovered self expanding stent assembly comprises self expanding stents
7 linked together by links.

1 11. (Currently Amended) A prosthesis as in Claim 10 further including
2 [included] barbs extending from a stent at the proximal end through [of] the
3 graft material.

Serial No. 10/726,963

PATENT

1 12. (Original) A prosthesis as in Claim 10 wherein the self expanding
2 stent assembly extending from a distal end of the biocompatible graft
3 material is formed from a biocompatible and biodegradable mesh material.

13 and 14. (Cancelled)

1 15. (Original) A method of treatment of aortic dissection disease
2 comprising the steps of:
3 a) loading a prosthesis onto a deployment device, the prosthesis
4 comprising a plurality of self expanding stents together defining an
5 elongate substantially cylindrical lumen wall engaging surface and at least
6 one of the stents having a bio-compatible graft material cover, whereby the
7 cover is adapted to close off a rupture in the wall of the lumen, the
8 deployment device including means to retain a proximal end of the
9 prosthesis in a retracted state and a trigger wire arrangement to release the
10 proximal end of the prosthesis, a sheath to retain the entire the prosthesis
11 in a retracted state and means to withdraw the sheath,
12 b) endovascularly deploying the deployment device with the
13 prosthesis loaded thereon to the site of the aortic dissection,
14 c) checking by radiographic techniques that the covered stent or
15 stents are at the site of the aortic dissection,
16 d) withdrawing the sheath to expose the covered stent or stents
17 of the prosthesis,
18 e) releasing the proximal end of the prosthesis by means of
19 releasing the trigger wire arrangement,
20 f) withdrawing the sheath to deploy the other stents of the
21 prosthesis along the wall of the lumen such that they provide pressure
22 against the wall of the lumen, and
23 g) withdrawing the deployment device.

Serial No. 10/726,963

PATENT

- 1 16. (Original) A method of treatment of aortic dissection disease as
- 2 in Claim 15 wherein the covered stent or stents are at the proximal end of
- 3 the prosthesis.